



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
George Gao et al.

Serial No.: 10/686,290

Filed: October 15, 2003

For: INSULATION SYSTEM FOR OIL
FILLED ENVIRONMENTS

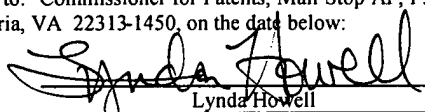
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Group Art Unit: 2832

Examiner: Tuyen T. Nuyen

Atty. Docket: 131026-1/YOD
GERD:0613

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March 1, 2006 Date	 Lynda Howell

PRE-APPEAL BRIEF REQUEST FOR REVIEW

In respect to the Advisory Action of Feb 2, 2006, Appellants respectfully submit this Pre-Appeal Brief Request for Review. This Request is being filed concurrently with a Notice of Appeal.

In the Final Office Action mailed on Dec 1, 2005, the Examiner essentially reiterated the rejection formulated in the previous non-final Office Action. Because the Appellants believe that the rejections are improper, the present Appeal has been filed.

The Examiner rejected all of pending claims 1-4, 6-8 and 29-44 under 35 U.S.C. §103(a). Of these, claims 1, 29, 33, 38 and 42 are independent.

Rejections Under 35 U.S.C. § 103(a)

Claims 1-4, 6-8 and 29-44 were rejected under 35 U.S.C. §103(a) as being unpatentable over Schroeder et al. (U.S. Patent No. 4,095,205; hereinafter “Schroeder”) in view of Fujita et al. (U.S. Patent No. 4,096,313; hereinafter “Fujita”). Rejected claims 1, 29, 33, 38 and 42 are independent and will be discussed in detail below.

Appellants submit that independent claims 1, 29, 33, 38 and 42 recite, in generally similar language, that the insulation system includes alternating layers of a polymeric and a non-polymeric material. According to the Specification, the non-polymeric material might include such materials as cellulose paper, fish paper, ceramic paper, or combinations thereof.

In the Final Office Action, the Examiner argued that Schroeder discloses a layered insulation system for an oil filled environment that includes a plurality of insulating units, each comprising first and second layers of insulating material. Further, the Examiner contended that at least one of the first and second layers is said to include a polymeric material, and that the insulating units are positioned with respect to each other such that the second layer of one insulating unit is adjacent to the first layer of another insulating unit. The polymeric material of Schroeder is polyethylene terephthalate.

The Examiner admitted that Schroeder does not teach a first layer comprising a non-polymeric material and a second layer comprising a polymeric material. Further, the Examiner relied upon Fujita to teach intermediate non-polymeric layers.

Schroeder teaches a sandwich insulation structure that includes a first layer of a “paper” formed of wholly aromatic polyamide fibers. Further, a plurality of layers of polyethylene terephthalate film is disposed in registry with the first layer. The plurality of layers are stacked to the desired thickness in order to provide the necessary electrical insulating characteristics for a transformer. In addition, a second layer of a “paper”

formed of a wholly aromatic polyamide fiber is disposed in registry with the top layer of the polyethylene terephthalate film to complete the insulation structure. *See*, Schroeder, column. 7, lines 25-45.

Fujita discloses an insulation system comprising first and second layers, wherein the first layer comprises “insulating paper” and the second layer comprises polypropylene material. The Examiner argued that it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the materials of the insulating system of Fujita in the Schroeder system for the purpose of enhancing strength.

Appellants respectfully submit that, in fact, Fujita does not disclose alternating layers of a polymeric and a non-polymeric material. Fujita actually discloses an “electrical insulating paper” including at least one layer (A) that is a *mixture of polypropylene fibers and kraft pulp* and at least one layer (B) of accumulated polypropylene fibers laminated to the layer (A) by fiber-to-fiber bonding of the polypropylene fibers. *See*, Fujita, Abstract.

In particular, the “electrical insulating paper” of Fujita can be prepared generally by superposing at least one layer of mixed paper composed of kraft pulp and polypropylene fibers or mixed paper composed of kraft pulp, polypropylene fibers and polyolefin microfibers for forming the layer (A) and at least one layer of polypropylene fiber web for forming the layer (B) into an assembly of the desired number of layers, and bonding the polypropylene fibers located at the surfaces of the layers by a desired method. *See*, Fujita, column. 5, lines 18-30. Clearly, Fujita does not disclose the layer (A) to be non-polymeric as claimed in the present invention. Indeed, Fujita fails to describe a non-polymeric layer at all.

Given the fact that none of the references teaches a non-polymeric layer at all, the combination of Schroeder and Fujita cannot suggest or teach alternating layers of a

polymeric and a *non-polymeric* material in an insulation system of the present claims. Thus, the references cannot support a *prima facie* case of obviousness.

Further, the Examiner suggested that it would have been obvious to one skilled in the art at the time the invention was made to use material of the insulating system of Fujita in the Schroeder system for the purpose of "enhancing strength" (apparently dielectric strength, although this is not mentioned by the Examiner). Appellants respectfully submit that the motivation to combine the references for the purpose of enhancing strength is nowhere found in either of the references. The present invention involves the use of alternating layers of polymeric and non-polymeric materials, which it has been found provides for use of less main insulation material while maintaining the same or greater dielectric breakdown strength than available via a larger thickness of paper insulation alone. There is simply no basis in the record for concluding that replacing layers of either prior art system with non-polymeric layers (not taught by either) would even increase the dielectric strength of the layered systems they teach.

For all of the above reasons, Appellants respectfully request that the Panel instruct the Examiner to withdraw the outstanding rejections and allow the pending claims.

Respectfully submitted,

Date: 3/1/2006

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